

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
6 May 2005 (06.05.2005)

PCT

(10) International Publication Number
WO 2005/041221 A1

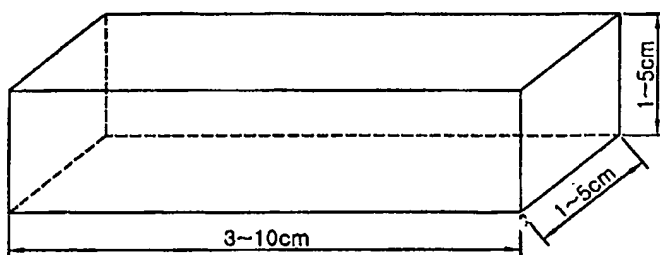
- (51) International Patent Classification⁷: **H01F 3/04** (74) Agents: **HONG, Sung-Chul** et al.; #703, Newseoul Bldg., 828-8 Yeoksam-dong, Kangnam-gu, Seoul 135-080 (KR).
- (21) International Application Number: **PCT/KR2004/002700** (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 22 October 2004 (22.10.2004)
- (25) Filing Language: Korean
- (26) Publication Language: English
- (30) Priority Data:
10-2003-0074561 24 October 2003 (24.10.2003) KR (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): **CHANG SUNG CORPORATION** [KR/KR]; 8-8 Pungjeong-ri, Nacsu-eup, Cheongwon-gun, Chungcheongbuk-do 363-933 (KR).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **PARK, Jae-Yeol** [KR/KR]; 13-1402 Dong-A APT., 70-5 Bupyeong-dong, Bupyeong-gu, Incheon 403-010 (KR). **YOU, Bong-Gi** [KR/KR]; 103-101 Woosung APT., Sangok 4-dong, Bupyeong-gu, Incheon 403-024 (KR). **LEE, Tae-Kyung** [KR/KR]; 556-61 Yonghyun 2-dong, Nam-gu, Incheon 402-022 (KR).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: UNIT BLOCK USED IN MANUFACTURING CORE WITH SOFT MAGNETIC METAL POWDER, AND METHOD FOR MANUFACTURING CORE WITH HIGH CURRENT DC BIAS CHARACTERISTICS USING THE UNIT BLOCK



(57) Abstract: A unit block for a core using soft magnetic metal powder, a core having excellent high-current DC bias characteristics using the unit block, and a method of producing the core are disclosed. The unit block is used to produce cores applied to an active filter for PFC, a three-phase line reactor, or an inductor for automotive electronics. A method of producing the core comprises mixing sendust alloy, High Flux, MPP, or silicon steel powders, which have an average particle size of 175 μm or less, with a solid

lubricant; compacting a mixture at a pressure of 10 - 18 tons per unit area; heat-treating the compacted mixture at 600 - 800°C for 1 - 2 hours to form the unit blocks each having a length of 3 - 10 cm, a width of 1 - 5 cm, and a height of 1 - 5 cm; and attaching the unit blocks using a heat- and fire-resistant adhesive.



WO 2005/041221 A1